Small Molecules

AM580

Retinoid pathway activator; Activates retinoic acid receptor (RAR) alpha

Catalog #	72962	1 mg
	72964	10 mg

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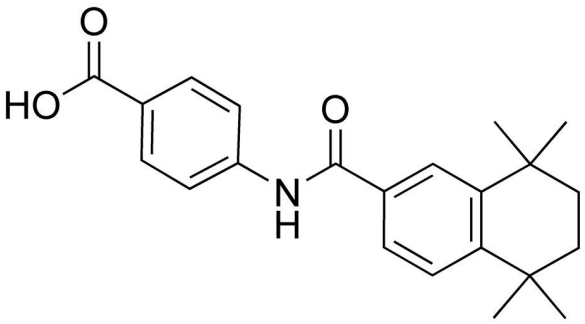
Product Description

AM580 is a retinoic acid receptor (RAR) agonist that is selective for RARα (EC_{50} = 0.36 nM) compared to RARβ (EC_{50} = 24.6 nM) and RARγ (EC_{50} = 27.9 nM; Bernard et al.) It is a derivative of retinoic acid (RA), however it demonstrates greater specific binding to RARα compared to RA, which exhibits little selectivity across RARα, β, or γ (Gianní et al.; Bernard et al.; Kim et al; Rochette-Egly & Germain).

Molecular Name:	AM580
Alternative Names:	CD336; NSC 608001; Ro 40-6055
CAS Number:	102121-60-8
Chemical Formula:	$C_{22}H_{25}NO_3$
Molecular Weight:	351.4 g/mol
Purity:	≥ 98%
Chemical Name:	4-[[(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-naphthalenyl)carbonyl]amino]-benzoic acid
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.
Solubility:	· DMSO ≤ 55 mM · Absolute ethanol ≤ 25 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 285 µL of DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

REPROGRAMMING
· Promotes reprogramming of somatic cells to induced pluripotent stem cells (Wang et al.).
DIFFERENTIATION
· Induces differentiation of human induced pluripotent stem cells into intermediate mesoderm, in combination with the GSK3β inhibitor CHIR99021 (Catalog #72052; Araoka et al.).
CANCER RESEARCH
· Inhibits tumor cell proliferation and survival signaling pathways, and induces apoptosis, leading to inhibition of mouse mammary tumor virus (MMTV)-neu- and MMTV-wnt1-induced mammary gland hyperplasia (Lu et al.).
· Inhibits tumor growth in MMTV-Myc mice (Bosch et al.).
· Inhibits endometrial cancer cell proliferation (Cheng et al.).
· Induces differentiation in acute promyelocytic leukemia cells (Gianní et al.).

References

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Rochette-Egly C & Germain P. (2009) Dynamic and combinatorial control of gene expression by nuclear retinoic acid receptors (RARs). Nucl Recept Signal 7: e005.
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